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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,825	02/25/2004	Belgacem Haba	TESSERA 3.0-337 II	5077

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TESSERA
LERNER DAVID et al.
600 SOUTH AVENUE WEST
WESTFIELD, NJ 07090

EXAMINER	
FULK, STEVEN J	

ART UNIT	PAPER NUMBER
2891	

DATE MAILED: 09/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/786,825	HABA ET AL.	
	Examiner	Art Unit	
	Steven J. Fulk	2891	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) *22-32* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-7, 12-17 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Glenn '644.

Regarding claim 1, Glenn discloses a method of making mountable MEMS devices comprising assembling a portion of a wafer having a main surface and a multiplicity of spaced-apart caps projecting upwardly from the main surface (fig. 2B, 42) and having channels between the caps (16); a terminal bearing element incorporating an array of terminals (fig. 3, 44); and electrically connecting the terminals by bonding leads extending to contacts on the wafer disposed in the channels (46).

Regarding claim 2, the reference further discloses the terminal-bearing element (fig. 3, 44) to include the lead (46), and bonding the leads to the contacts (16).

Regarding claim 3, the reference further discloses the leads to be aligned with the channels (lead 46 must be aligned with channel/contact 16 in order to electrically connect to contact).

Regarding claim 4, the reference further discloses the leads (fig. 3, 46) to extend at a level above the contacts (16), and the leads bend down to engage the contact.

Regarding claims 5 and 6, the reference further discloses the channels to include wide channels (32) and narrow channels (34), and contacts disposed in the wide channels with leads aligned to the channels (MEMS device 14 would inherently have electrical contacts of some length (elongated) and aligned with channel 32).

Regarding claim 7, the reference further discloses severing the wafer in the channels (fig. 2B, 20; singulation streets) to form a plurality of units, each unit containing a cap, a terminal, and a contact (fig. 3).

Regarding claim 12, the reference further discloses the wafer to include a plurality of MEMS devices (fig. 3, 14), and the caps to cover the MEMS devices.

Regarding claim 13, Glenn discloses a method of making electronic devices comprising assembling a portion of a wafer having a main surface (fig. 2A, 42), structure defining an upper surface above the main surface, depressions extending into the wafer from the upper surface (32 and 34) and contacts in the depressions (16 in depression 34); and a terminal bearing element incorporating an array of terminals so as to mount a plurality of terminals simultaneously (fig. 3, 44); and electrically connecting the terminals by bonding leads extending to contacts on the wafer disposed in the depressions (46).

Regarding claim 14, the reference further discloses the terminal-bearing element (fig. 3, 44) to include the lead (46), and bonding the leads to the contacts (16).

Regarding claim 15, the reference further discloses the leads to be aligned with the depressions (lead 46 must be aligned with depression/contact 16 in order to electrically connect to contact).

Regarding claim 16, the reference further discloses the leads (fig. 3, 46) to extend at a level above the contacts (16), and the leads bend down to engage the contact.

Regarding claim 17, the reference further discloses severing the wafer in the channels (fig. 2B, 20; singulation streets) to form a plurality of units.

Regarding claim 21, the reference further discloses the structure defining the upper surface to include a plurality of spaced-apart caps defining the depressions as channels extending between caps (fig. 2A, channel/depressions 32 and 34 between upper surface 42).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 8-10 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glenn in view of Haba et al. '910.

Glenn teaches all of the elements of the claims as set forth in paragraph 2 above, but Glenn does not explicitly teach using a lead frame that includes a dielectric layer and terminals electrically connected to each other prior to assembly

as the terminal-bearing element. Haba et al. teaches a method of making electrical connections in microelectrical devices using breakable lead frame sections, wherein the lead frame terminal is mounted on top of the device (fig. 12; col. 11, lines 17-20); the lead frame is supported by a dielectric layer (fig. 12, 112); the terminals (118, 130) are separated from each other by severing the leads (128) and bending the leads to engage with the contacts in the channels (172).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the lead frame system of Haba et al. to electrically connect the MEMS device of Glenn. One would have been motivated to do this because using a lead-frame to electrically connect devices to peripheral circuitry was well known to be a faster process than using individual wire bonds, thus improving the manufacturing process and reducing the cost of manufacturing.

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Glenn '644 in view of Kim et al. '206.

Glenn teaches all of the elements of the claim including a making a mountable MEMS device having a membrane and a cavity (col. 1, lines 11-21), but does not explicitly teach the MEMS device being acoustically-active. Kim et al. teaches a method of making a mountable, acoustically-active device (surface acoustic wave filter).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the device of Glenn to be used as an acoustically-active device as described by Kim et al. One would have been motivated to do this because surface acoustic wave filters are conventional MEMS devices having a

membrane and cavity that are frequently used in RF and IF commercial applications (Kim et al., col. 1, lines 16-22).

Response to Arguments

6. Applicant's arguments with respect to claims 1-4, 6-7, 12-17 and 21 have been considered but are moot in view of the new ground(s) of rejection as set forth above.

7. Applicant's arguments with respect to claims 8-10 and 18-20 have been fully considered but they are not persuasive.

Applicant argues that Haba et al. does not teach the terminal bearing element to be electrically connected prior to the assembly step. However, Haba et al. teaches the connection section (fig. 12, 130; read as a terminal) to be electrically connected prior to the assembly step, and when combined with Glenn as described above, the severing step of Glenn would sever at least some connections between the terminals.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Johnson et al. '417, Bureau et al. '194, Bradley et al. '664, and Weekamp et al. '163 disclose methods of making mountable, acoustically-active MEMS devices.

Grube et al. '863, DiStefano et al. '239, Miyazaki et al. '215, and Jiang et al. '456 disclose methods of attaching electrical circuit devices using breakable lead-frames.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven J. Fulk whose telephone number is (571) 272-8323. The examiner can normally be reached on Monday through Friday, 9:30am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Baumeister can be reached on (571) 272-1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SJF

Steven J. Fulk
Patent Examiner
Art Unit 2891

September 8, 2006

BRADLEY K. SMITH
PRIMARY EXAMINER